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imagery analysis report

Cuban SAM Forces (S)

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CUBAN SAM FORCES (S)

INTRODUCTION

1. (S/D) Cuba has developed a surface-to-air missile (SAM) network adequate for the limited defense of major target concentrations. This report presents a synopsis of SAM forces organization and information on the occupancy status of Cuban SAM sites. Comments regarding SAM camouflage and deception measures, alert indicators, and possible Soviet SAM personnel involvement are also presented.

DESCRIPTION

2. (S/D) Soviet-made SAM systems have been observed in Cuba since 1962. Initially, the SA-2 GUIDELINE system was deployed island-wide for protection against medium- and high-altitude aircraft. The SA-3 GOA system, designed for defense against low-flying aircraft, was first seen in 1976, although photographic evidence of impending deployment existed in 1967. More recent developments include the addition of the man-portable SA-7 GRAIL and the identification of a single SA-9 GASKIN. Together, these systems theoretically provide protection against any aircraft operating at altitudes ranging from 0 to 90,000 feet.¹

Organization of SAM Forces

3. [] Long-term analysis of imagery [] has identified five SAM brigades in Cuba (Figure 1). Three of these brigades, designated Western Brigades 1, 2, and 3 (with headquarters in Bejucal, Managua, and Matanzas respectively), protect the Havana region. The Central SAM Brigade, with headquarters in Santa Clara, offers protection for the Santa Clara-Cienfuegos corridor. Finally, the Eastern SAM Brigade, with headquarters in Holguin, supports the air defense of that city and associated military targets.

4. [] The SAM brigades vary in strength from three to nine occupied sites (one battalion per site). While all five brigades have the SA-2 system, only Western Brigades 1 and 2 have the SA-3 system. The latter unit, with headquarters in Managua, has six of the eight operational SA-3 sites in Cuba. Two of the heaviest concentrations of operational SAM sites in Cuba are in these two brigade areas.

5. (S/D) Considering present deployment and construction patterns, there is no evidence to suggest the permanent deployment of SA-3 equipment outside the Havana area.

Current Occupancy Status

6. (S/D) Table 1 shows the unit composition and status of active SAM sites in Cuba. Twenty-six SAM sites were occupied and presumed operational on imagery acquired between [] [] Eighteen of these sites are SA-2 equipped; the remaining eight sites have the newer SA-3 equipment. Twenty-four of the sites are permanent; one SA-2 site (not illustrated) and one SA-3 (Figure 2) were field deployed.

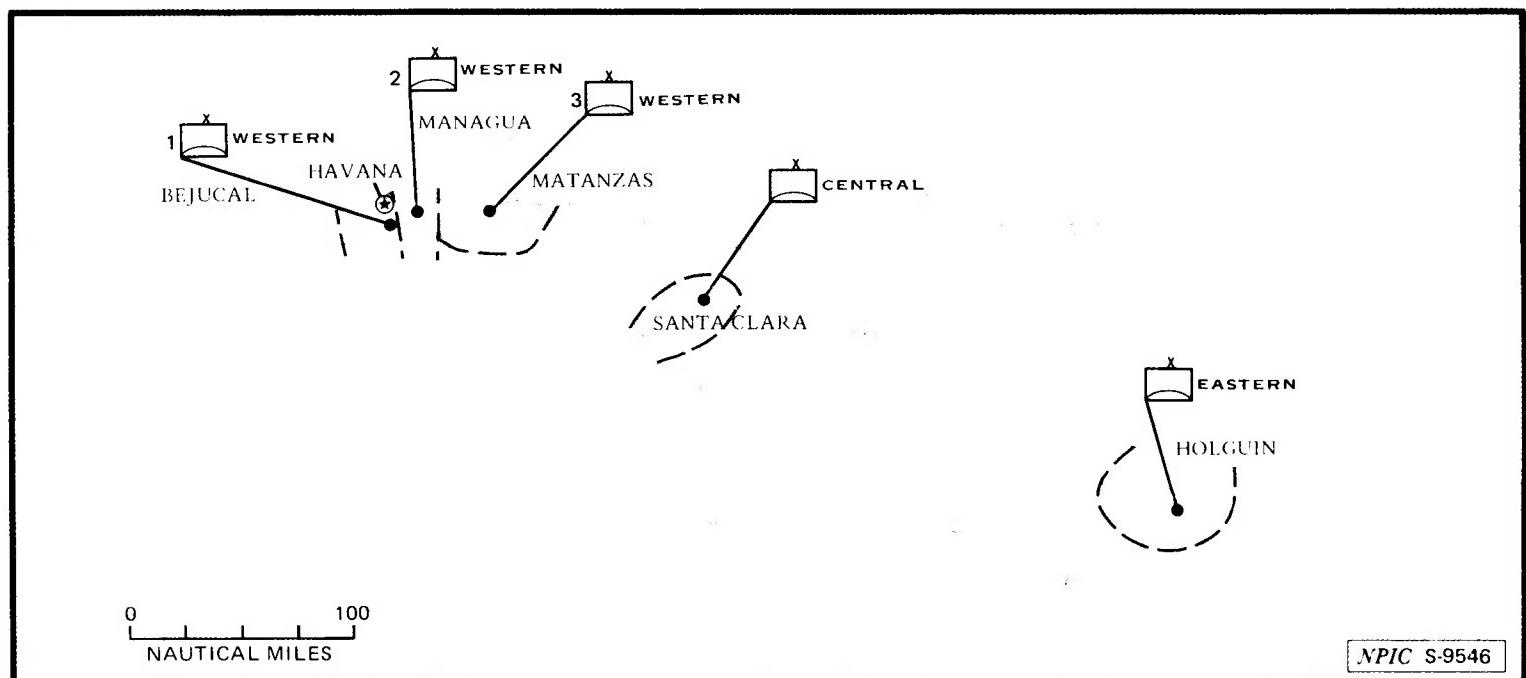
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**FIGURE 1. CUBAN SAM FORCES DISPOSITION (BRIGADE ECHELON)**
Table 1.
SAM Unit Composition
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Parent Organization	Active Sites (Occupied or Ucon)	Coordinates	BE Number	Status
Western Brigade 1 (Hq—Bejucal)	Alquizar SAM Site A30-2 El Cano SAM Site 2 La Salud SAM Site A04-2 Punta Ballenatos SAM Site A26-2 Mariel SAM Site A30A-2 Punta Brava SAM Site A30-2 Mariels SA-3 SAM Site East A16-3	22-49-26N 082-38-37W 23-03-27N 082-29-21W 22-53-05N 082-24-41W 23-04-40N 082-29-45W 23-00-44N 082-48-48W 23-01-32N 082-31-34W 22-59-50N 082-44-25W		Occupied SA-2 site Occupied SA-2 site Occupied SA-2 site Occupied SA-2 site Occupied SA-3 site Occupied SA-3 site SA-3 site ucon
Western Brigade 2	Campo Florida SAM Site A07-2	23-09-17N 082-02-22W		Occupied SA-2 site

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Table 1 (Continued)

Parent Organization	Active Sites (Occupied or Ucon)	Coordinates	BE Number	Status
(Hq—Managua)	La Catalina SAM site A34-2	22-58-18N 082-00-11W		Occupied SA-2 site
	Tarara SAM Site	23-09-21N 082-14-42W		Occupied SA-2 site
	Guira De Melena SAM Site A36-3	22-49-25N 082-30-31W		Occupied SA-3 site
	Guanabo SAM Site A12-3	23-09-25N 082-08-29W		Occupied SA-3 site
	La Habana SAM Fort De La Cabana A03-2	23-08-55N 082-20-26W		Occupied SA-3 site
	La Habana SAM Site Fontanar A01-3	23-01-30N 082-24-30W		Occupied SA-3 site
	Managua SAM Site A05-2	22-59-42N 082-15-58W		Occupied SA-3 site
	Managua Field-Deployed SA-3 Site*	22-58-17N 082-16-50W		Occupied/field-deployed SA-3 site
	Managua SA-3 Site SSE	22-54-30N 082-15-05W		SA-3 site ucon
Western Brigade 3	Matanzas SAM Site East	23-02-47N 081-28-18W		Occupied SA-2 site
(Hq—Matanzas)	Matanzas SAM Site A04-2	23-05-00N 081-33-29W		Occupied SA-2 site
	Matanzas SAM Site SSE A18-2	22-58-35N 081-34-10W		Occupied SA-2 site
	Matanzas Field-Deployed SAM Site East	23-02-47N 081-28-27W		Occupied/field-deployed SA-2 site
	Matanzas SAM Site La Conga A18A-2	22-58-50N 081-34-00W		SA-2 site ucon
Central Brigade	Constancia SAM Site A10-2	22-14-19N 080-30-33W		Occupied SA-2 site
(Hq—Santa Clara)	Ranchuelo SAM Site A33-2	22-23-50N 080-10-02W		Occupied SA-2 site
	Santa Clara SAM Site A34-2	22-29-00N 080-00-00W		Some dummy equipment; occupied SA-2
	Santa Isabel Del Las Lajas SAM Site A35-2	22-28-20N 080-18-47W		Some dummy equipment; occupied SA-2 site
	Santa Clara SAM Site North	22-33-45N 079-55-30W		SA-2 site ucon
Eastern Brigade	Holguin SAM Site El Coco	20-51-02N 076-20-55W		Occupied SA-2 site
(Hq—Holguin)	Holguin SAM Site SE A14-2	20-48-30N 076-13-07W		Occupied SA-2 site
	Holguin SAM Site SSW	20-46-05N 076-17-07W		Occupied SA-2 site; construction continuing

*Not targeted separately because of temporary nature of site.

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7. (S/D) Four additional SAM sites (two SA-2 and two SA-3) are in various stages of construction and are not yet operational.

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Possible Soviet Role

13. (S/D) No photographic evidence exists that Soviet SAM units are in Cuba. However, a unit rotation was observed at the Campo Florida SAM Site on  (Figure 8). During the rotation, the appearance of tent types considered unique to Soviet forces suggests that this activity possibly represented the temporary replacement of Cubans by a more technically proficient Soviet missile crew. This was possibly because of the resumption of US SR-71 overflights of Cuba.

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REFERENCES

IMAGERY

(S/D) All applicable satellite imagery acquired from [redacted] was used in the preparation of this report.

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DOCUMENTS

1. DIA Fact Book. DDI-2680-13-77, *Communist World Forces (U)*, Oct 77 (SECRET)

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2. NSA. Various TAG Series, CUZ-ZTNG/ZOPS-CU from 1979—1980 (SECRET) [redacted]

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(S) Comments and queries regarding this report are welcome. They may be directed to [redacted]
Third World Forces Division, Imagery Exploitation Group, NPIC, [redacted]

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